



AMENDMENTS TO THE CLAIMS

1-18. (Cancelled)

19. (New) A composition comprising:

(A) a dispersion of a crosslinkable polyurethane polymer in aqueous medium, and obtained from a polyurethane prepolymer which is the reaction product of:

- (i) at least one polyisocyanate, and
- (ii) at least one organic compound containing at least two reactive groups which can react with isocyanates, and
- (iii) at least one compound which is capable of reacting with an isocyanate group and which contains at least one additional functional group which is susceptible either to dispersion in water and/or to a crosslinking reaction
- (iv) in an oxygenated solvent selected from the coalescing agents having a higher boiling point of from 150 to 250°C, under 760 mm Hg and being chemically inert towards isocyanates during the manufacture of the polyurethane;
the so obtained polyurethane prepolymer being further neutralized and dispersed in water, and optionally then reacted with a chain extender or capping agent (v);

(B) a crosslinker which is a vinyl-type polymer having functional groups reactive with the functional groups of the polyurethane polymer (A).

20. (New) A composition according to claim 19, wherein said oxygenated coalescing solvent (iv) is:

the fully reacted alkyl or aryl esters of aromatic, aliphatic or cycloaliphatic polycarboxylic acids,

the fully reacted alkyl or aryl esters of aromatic, aliphatic or cycloaliphatic polyglycols,

the fully reacted alkyl or aryl ethers of aromatic, aliphatic or cycloaliphatic polyglycols,

the fully reacted mixed alkyl/aryl esters of mixed aromatic, aliphatic or cycloaliphatic polyglycol carboxylates,

the fully reacted mixed alkyl/aryl ethers of mixed aromatic, aliphatic or cycloaliphatic polyglycol-carboxylates

the unsubstituted or alkyl or aryl substituted cyclic carbonates,

the unsubstituted or alkyl or aryl substituted cyclic ethers,

the unsubstituted or alkyl or aryl substituted cyclic esters, or

the unsubstituted or alkyl or aryl substituted cyclic anhydrides.

21. (New) A composition according to claim 20, wherein said oxygenated coalescing solvent (iv) is:

dimethyl esters of adipic, glutaric, succinic or phthalic acids,

diisobutyl esters of adipic, glutaric, succinic or phthalic acids,

ethyl- 3-ethoxypropionate,

2,2,4-trimethyl-1,3-pentanedioldiisobutyrate,

ethylene carbonate,

propylene carbonate,

propyleneglycol diacetate or

dipropylene glycol dimethyl ether,

used alone or in admixture.

22. (New) The composition according to claim 19, wherein said coalescing solvent (iv) is used in an amount of 5 to 40 weight % expressed on the dry polymers.

23. (New) The composition according to claim 19, wherein the polyisocyanate (i) is an aliphatic, cycloaliphatic, aromatic or heterocyclic polyisocyanate or a combination thereof.

24. (New) The composition according to claim 19 wherein the organic compound (ii) containing at least two isocyanate-reactive groups is selected from the group consisting of

polyester polyols, polyether polyols, polycarbonate polyols, polyacetal polyols, polyesteramide polyols, polyacrylate polyols and polythioether polyols, alone or in admixture.

25. (New) The composition according to claim 19, wherein the isocyanate-reactive compound (iii) contains at least one anionic salt functional group or acid group which may be subsequently converted to such anionic salt group, and is (a) a hydroxycarboxylic acid of general formula $(HO)_xR(COOH)_y$, wherein R represents a straight or branched chain hydrocarbon radical having 1 to 12 carbon atoms, and x and y are integers from 1 to 3, or (b) a sulfonated polyester obtained by the reaction of a sulfonated dicarboxylic acid with one or more polyhydric alcohols, or by the reaction of a sulfonated diol with one or more polycarboxylic acids.

26. (New) The composition according to claim 19, wherein the capping agent (v) is water or an aliphatic, alicyclic, aromatic or heterocyclic primary or secondary polyamine having up to 80 carbon atoms, wherein said polyamine can bear a further functional group.

27. (New) The composition according to claim 26 wherein the functional group is gamma-aminopropyltrimethoxysilane, gamma-aminopropyltriethoxysilane, N-beta aminoethyl-gamma-aminopropyltrimethoxysilane, bis-(gamma triethoxysilylpropyl) amine or N-beta-(aminoethyl)-gamma-aminopropylmethyldimethoxysilane.

28. (New) The composition according to claim 19, wherein the vinyl-type polymer is the product formed by the free-radical addition polymerization of at least one monoethylenically unsaturated monomer with at least one other ethylenically unsaturated monomer containing a functional group and capable of providing a crosslinking reaction with the polyurethane component.

29. (New) The composition according to claim 28 wherein the functional group is acetoacetoxyalkyl ester group, carboxylic and sulfonic groups, isocyanates, hydroxy, amine, acrylic, allylic, vinyl, alkenyl, alkynyl, halogen, epoxy, aziridine, aldehyde, ketone, anhydride, carbonate, silane, carbodiimide, ureidoalkyl, N-methylolamine, N-methylolamide, N-alkoxy-methyl-amine or N-alkoxymethyl-amide.

30. (New) The composition according to claim 28, wherein the monoethylenically unsaturated monomer containing an acetoacetoxyalkyl ester group is a compound having the formula



wherein R¹ represents a

CH₂=CR'-COO-R"- group or a CH₂=CR'-R"- group in which

R' is a hydrogen atom or a methyl radical and

R" is an alkylene radical having 1 to 12 carbon atoms.

31. (New) A composition according to claim 30, wherein the monoethylenically unsaturated monomer containing an acetoacetoxyalkyl ester group is acetoacetoxyethyl (meth)acrylate.

32. (New) A composition according to claim 28, wherein the monoethylenically unsaturated monomer containing an acetoacetoxyalkyl ester group is present in an amount of from about 1 to about 80 % by weight of the vinyl polymer.

33. (New) A composition according to claim 28, wherein the monoethylenically unsaturated monomer containing an acetoacetoxyalkyl ester group is present in an amount of from about 5 to 20 % by weight of the vinyl polymer.

34. (New) A composition according to claim 28, wherein the weight ratio of said at least one polyurethane polymer to said at least one vinyl polymer is within the range of from 95:5 to 5:95.

35. (New) The composition according to claim 19, wherein the weight ratio of said at least one polyurethane polymer to said at least one vinyl polymer is within the range of from 1:2 to 2:1.

36. (New) The process for the preparation of an aqueous crosslinkable resin composition according to claim 19, which comprises homogenously mixing together at room temperature an aqueous dispersion of at least one polyurethane polymer and an aqueous dispersion of at least one vinyl polymer.

37. (New) The process for the preparation of an aqueous resin composition according to claim 19, which comprises subjecting the monomers of the vinyl polymer having functional groups to radical polymerization in the presence of an polyurethane polymer having anionic salt functional groups or subjecting an isocyanate-terminated polyurethane prepolymer having anionic salt functional groups to chain-extension with a capping agent in the presence of a vinyl polymer having functional groups.

38. (New) A protective or adhesive coating obtained with an aqueous composition according to claim 19.